

DESCRIPTIONS OF NEW RATS AND MICE FROM QUEENSLAND.

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An impression formed when preparing a paper describing five new species of *Pseudomys* (*sensu lato*)¹ that many yet remained to be discovered, hitherto unnoticed because of shy habits and the tendency to accord far too extensive ranges to individual forms, has received confirmation in a collection recently submitted for identification by the Director of the Queensland Museum.

This interesting murine material was collected by Mr. F. L. Berney, recently President of the Royal Australasian Ornithologists Union, near the homestead of his property known as Barcarolle, on the Thomson River, 135 miles south of Longreach, central Queensland. The homestead is on a reddish sand ridge which is fairly heavily timbered, and the remarkable similarity of colouring shown by the representatives of three distinct genera suggests that the general surroundings exercise a decided influence on the local fauna. Fortunately several years preservation in formalin, which is not suitable for mammals, does not seem to have affected coloration very much.

Of the eighteen specimens one represents a new race of *Notomys*, seven a new race of *Pseudomys* (*sensu stricto*), while ten mice represent a very distinct and unusually coloured species of *Gyomys*, with which the collector's name is gladly associated as a small tribute to his keenness as a naturalist, which has resulted in many helpful donations to both the Queensland and Australian Museums.

A general review of the Australian Museum material also brought to light a new species of *Gyomys* from the Rockhampton district, the smallest known for the genus according to two specimens collected by my colleague Mr. Anthony Musgrave. Also of considerable interest was the identification of a specimen and odd skull of *Leggadina patria* from the Gladstone district, thereby greatly extending the range of the small coastal species from the original locality of Inkerman in the Townsville area.

It is notable that the elevation to generic rank of the four subgenera of *Pseudomys*, initiated in the Check-List of Mammals in 1934, becomes even more desirable with the description of additional forms, which raise to thirty the known total of species and geographical races for the original genus.

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¹ Troughton.—Records Austr. Museum, xviii, 6, 1932, pp. 287-294.

Regarding the subgeneric divisions, Finlayson has stated that the manner of their construction by Thomas suggested a merely temporary expedient. On the contrary one finds that the author not only nominated a type and provided a comparative diagnosis of each sub-division but listed the appropriate species as well, the only tentative feature being the hesitation expressed by Thomas in leaving several very diverse species under the same generic heading.

Although the diagnostic characters are naturally variable or less marked in some instances, a combination of dental and cranial features will invariably relegate individual species to their respective divisions. The generic value of these divisions is strikingly illustrated in the description of *Gyomys desertor* Troughton (*loc. cit.*) of Central Australia, which authors had previously confused with the Western Australian *Thetomys nanus* Gould because of the close external resemblance.

In 1934 Brazenor² listed the previously known species of the *Gyomys* "group" as four but he omitted the earliest species, *novae-hollandiae*, and also *desertor* described in 1932, while including the geographical race of *albo-cinereus*. Description of the two small forms below raises the known total of full species of the group to eight, providing a range of size and coloration which renders generic distinction essential to a systematic or popular comprehension of the several groups comprising the original super-genus *Pseudomys*.

GYOMYS BERNEYI sp. nov.

Diagnosis.—A medium-sized rather short-tailed species, of an unusually warm yellowish-brown for the genus, the tone above nearest that of *novae-hollandiae*, from which it is distinguished by its sharply contrasted entirely white belly fur, relatively shorter tail, and longer molar row. Dimensions and coloration distinguish it from all others of the genus. *Habitat*: Barcarolle Station, 135 miles south of Longreach, Queensland.

Colour.—Above, about Clay Colour to Tawny-Olive (Ridgway), composed of the Ochraceous-Buff fur-tips with their pencilling of Sepia, becoming clearer on the sides, and a Pale Yellow-Orange on the cheeks and belly-edge, contrasting sharply with the entirely white fur of the underparts. Ears Sepia to Clay toned outside, white-haired within. Manus white, with a wash of Pale Yellow-Orange extending down the arm and over wrist. Pes white, a yellowish wash extending over the proximal fourth. Tail brownish above, dull white below. Female somewhat paler in tone, more drab buff on the centre of back, with Light Pinkish Cinnamon edging the belly and also contrasting sharply with the white undersurface.

² Brazenor.—Mem. Nat. Mus. Melb., viii, 1934, p. 159.

External characters.—Fur of medium length and density, that of the back averaging 8.5 and the long pile about 10.5 mm. Ear of medium length but broad, reaching within 2 mm. of posterior canthus of eye when pressed forward. Pes comparatively short and broad, the length varying less than 1 mm. in a series of ten young to adult specimens of both sexes. Tail proportionately the shortest in the genus.

Skull and dentition.—Skull rather lightly built, with a low dorsal profile, short narrow rostrum, and very light zygomatic arches. Palatal foramina extremely long and narrow, longer than in all species excepting the much larger-skulled *glaucus* and *fumeus*. Nasals shorter than in all species excepting *pumilus*. Incisors very slender and narrow. Upper molar row much lighter than in *desertor*, slightly longer than in *glaucus*, definitely longer than in *novæhollandiæ*, and much longer than in *apodemoides*.

Dimensions of holotype male.—Wet specimens (female in brackets); head and body 95.5 (99.5); tail 63.5 (61.5); pes of both 19×3.6 ; ear 13.5×10.3 (14×11.5) mm.

Skull: greatest length 25.5; basal length 22.3; zygomatic breadth 14.1; nasals 8.2×2.5 ; interorbital width 3.6 (3.9); breadth braincase 12; palatal length 13.9; palatal foramina 5.8×1.2 (5.4×1.4); upper molar row 4.6; breadth of m^1 1.5; bulla length 5.2, breadth including meatal tubercle 5.2 mm.

Habitat.—Timbered sand ridge country on Barcarolle Station, 135 miles south of Longreach, central western Queensland.

Typical series.—Seven males and three females, the holotype and three paratypes in the Australian Museum, Nos. M.6000-3, and six paratypes in the Queensland Museum, where the series was originally sent by the collector, Mr. F. L. Berney.

Remarks.—This very distinct, brightly coloured small species, is distinguished from all other *Gyomys* by the sharply contrasted dorsal and ventral coloration and short tail, and by having shorter nasals than all but the smallest species (*pumilus*), while the palatal foramina are decidedly longer than in any species with skulls of similar size. Of the general appearance, Mr. Berney noted that "It is a short-faced and wide-jawed mouse, with a stumpy tail which looks as if each individual had lost half an inch of the tapering end."

GYOMYS PUMILUS sp. nov.

Diagnosis.—Smallest known for the genus and nearest *novæhollandiæ* in coloration, but clearly distinguished from it by the much shorter hindfoot, ear, and molar row. *Habitat.*—Byfield, 25 miles north of Yeppoon, near Rockhampton, coastal Queensland.

Colour.—General colour of the back of the female holotype sandy-brown, nearest a light or buffy Sayal Brown, composed of the Cinnamon-Brown and Warm Buff tipping, becoming clearer on the rump and sides, with an ochraceous wash on the nose and below the eyes. Undersurface Olive-Buff, somewhat paler on the throat where the fur is uni-coloured. Basal fur above and below a shade of greyish-brown, sharply contrasting with the pale tips. Front of ear conch Prout's Brown, richer than the rest of the body coloration. Manus, pes, and tail buffy white.

External characters.—Fur soft and rather long, about 7 mm. in the middle of the back. Ear relatively long, surpassing the posterior canthus of the eye when pressed forward. Pes in two adult females the shortest known for adults of the genus (16.3-16.7), the measurement of 16 mm. given for *G. albocinereus* apparently referring to immature females. Tail of medium length, equalling that of the much larger short-tailed *berneyi*, but much shorter than in adult *novæhollandiæ*.

Skull and dentition.—The skull is definitely the smallest and lightest known for the genus, the cranium though rather broad in comparison with the narrow nasal region being quite transparent. Edge of zygomatic plate straight. Palatal foramina relatively very broad (4×1.5), their breadth equalling that of the larger *berneyi* (5.5×1.5 mm.). Bullæ small and transparent. Upper molar row quite proportionate, but naturally the smallest of the genus, the length being 3.5 as compared with 3.8 in *apodemoides*, and 4.1 mm. in the nearer allied *novæhollandiæ*.

Dimensions of holotype.—Adult female in spirit: head and body 68; tail 61; pes 16.7; ear 11×8.5 mm.

Skull: greatest length 20.8; basal length 16.8; zygomatic breadth 11; nasals 7.2×2 ; interorbital width 3.4; breadth braincase 10.2; palatal length 10.3; palatal foramina 4×1.5 ; upper molar row 3.5; breadth of m^1 1; bulla length 3.6, breadth including meatal tubercle 4 mm.

Habitat.—Byfield, 25 miles north of Yeppoon, near Rockhampton, coastal south Queensland.

Typical specimens.—Adult female holotype and paratype, Nos. M. 6032-3, collected and presented in 1924 by Mr. Anthony Musgrave F.R.E.S., Entomologist to the Australian Museum.

Remarks.—I am indebted to my old friend and colleague, Anthony Musgrave, for the opportunity of describing this tiny and delicately coloured species, which has the distinction of being the smallest indigenous mouse known to occur in Australia or the adjacent islands. It is also most interesting.

as probably representing a northern form of the rare type of the genus, *novæhollandiæ*, which does not appear to be represented in any Australian museum and has not been recorded since Gould, in his Mammals of Australia, referred to Waterhouse's type, described from Yarrundi on the Upper Hunter River in 1843, as somewhat immature, and recorded additional specimens from the same district, and others secured on the banks of the Gwydir River by his collector Gilbert.

As the late Oldfield Thomas stated in correspondence, there is no doubt that many specimens marked *novæhollandiæ* in museums are merely so named because they came from the New Holland of the early days, while no doubt the apparent rarity of the species is partly due to the fact that country observers would naturally associate the animal with the introduced house mouse which is frequently found in the paddocks and bush.

There is, however, no doubt of the distinction of the much smaller *pumilus*, both in comparison with Gould's figures of the natural size, and in the paler tail and more yellowish underparts, as well as in the smaller cranial and dental measurements contrasted with the greatest length of 25, breadth of 11.5, and molar row of 4.1 mm. given for *novæhollandiæ* in correspondence by Oldfield Thomas.

LEGGADINA PATRIA Thomas and Dollman.

Mus patrius Thomas and Dollman, Proc. Zool. Soc., 1908 (April, 1909), p. 791.

It is interesting to note of this small coastal Queensland species, which has not been recorded since its original description from Inkerman near Townsville in 1909, that examination of the collection some years ago revealed a spirit specimen listed No. 41 in the earliest register of the Australian Museum, and an odd unregistered skull. These specimens, collected at Warroo on the shores of Port Curtis, near Gladstone, by F. A. Blackman, who also presented collections of shells from that district, do not differ markedly from the original description and they therefore indicate a considerable extension of range southward for about 400 miles.

Returning down the east coast from an expedition to north Australia in the winter of 1934 I had hoped to investigate reports of a plague of mice in the Bowen area, but unfortunately the road conditions at the time necessitated an inland detour from Townsville to Rockhampton. In view of the above extension of range, however, there seems little doubt that the reports referred to this small indigenous species.

Strangely enough, no examples were received amongst the series of over 150 rats of several species, from north and south of Townsville, recently

submitted for examination by the Director-General of Public Health in connection with the investigation of Weil's Disease, and by the Colonial Sugar Refining Company in regard to economic loss on the cane fields. Fortunately, however, the little animal is probably too small to cause damage to the sugarcane or contend with its larger relatives, so that there is every reason to hope that the species may never become a serious danger to health or produce.

PSEUDOMYS MINNIE FLAVESCENS subsp. nov.

Diagnosis.—A buffy to umber toned race lacking the Pinkish Cinnamon wash of the typical form, and with the fur longer and less dense and the feet and tail more coarsely haired. Dimensions generally similar though averaging somewhat larger, the nasal region and zygomatic arches more heavily built, and the bullæ definitely larger. Habitat: Barcarolle Station, 135 miles south of Longreach, Queensland.

Colour.—General colour of back, in a male and two females, ranging from light yellowish to umber brown, replacement of the Pinkish Cinnamon tone of the typical race with buffy tones being responsible for the characteristic yellowish coloration. The lighter female allotype has the dorsal colour composed of Ochraceous-Buff pencilled with Clove Brown, while the darker holotype male has a mixture of clay colour and blackish brown. The head as usual is lighter, and the buffy wash clearer on the sides, which are not strongly contrasted with the buffy white belly tips, through which the dark grey basal fur is seen. Fore and hind limbs washed with bright buff and manus and pes white. Tail brown above, contrasting with the white sides and undersurface.

External characters.—Pelage finer, sparser, and much longer than in the typical race, the main pile averaging 13 instead of 10 mm., and the manus, pes, and tail are longer and more coarsely haired. Dimensions decidedly variable but ear definitely broader than in typical *minnie*.

Skull and dentition.—Dimensions generally similar but the skull more stoutly built, with stronger zygomatic arches, more arched dorsal profile, and a much deeper rostral region, and decidedly larger bullæ than in the typical form. Dentition similar.

Dimensions of holotype male.—Wet specimen (female in brackets): head and body 120 (133); tail 103 (115); pes 30 (29.3); ear 23 × 17.5 (23.5 × 17) mm.

Skull: greatest length 30.7 (32); basal length 27.2 (28.6); zygomatic breadth 16.2 (16.6); nasals 11.3 × 3 (12.7 × 3.2); interorbital width 3.8 (4);

breadth braincase 14.2; palatal length 16.6 (17.4); palatal foramina 7.5×2.1 ; upper molar row 5.7 (5.8); breadth of m^1 1.9 (2); bulla 5.3×5.9 (5.6×5.9), the breadth including meatal tubercle.

Habitat.—Timbered sand ridge country on Barcarolle Station, 135 miles south of Longreach, central western Queensland.

Typical series.—Three males and four females, the holotype skin and skull and two paratypes, Nos. M. 6004-6, in the Australian Museum, and four paratypes in the Queensland Museum where the specimens were originally sent by the collector and donor, Mr. F. L. Berney.

Remarks.—The richer coloration and more robust build of this central Queensland race apparently reflects the less arid habitat with its richer more heavily timbered sand ridges. The yellowish instead of greyish tone, longer pelage, coarsely haired feet and tail, and broader ear, associated with the larger and more elevated bullæ, readily distinguish it from the typical race of north-eastern South Australia.

NOTOMYS ALEXIS REGINÆ subsp. nov.

Diagnosis.—Colour and dimensions generally much as in typical *alexis* and gular region quite similar, the colour above somewhat more yellowish and the sides differing in being sharply contrasted with the whitish underparts, much as in *Ascopharynx cervinus*. Skull distinguished by the much narrower interorbital region, smaller nasals, and smaller and more transparent bullæ. Habitat: Barcarolle Station, 135 miles south of Longreach, Queensland.

Colour.—Generally lighter than in typical *alexis*, much as in *A. cervinus*, about Cinnamon Buff pencilled with Clove Brown above, the clearer cinnamon of the sides and limbs making a sharply contrasted line with the whitish underparts, the fur of which shows only a faint trace of grey basally instead of the definite grey band seen in typical *alexis*; manus and pes similarly whitish but tail with the brush not so long or so dark brown above.

External characters.—Gular area as in *alexis*, not strongly haired anteriorly as in *mitchelli*, or definitely lipped as in *cervinus*. Compared with specimens of typical *alexis*, measured personally in the field, the young adult male in spirits, has the ear and pes relatively shorter. Interdigital pads of pes distinctly broader and widened out distally in comparison with the pads of typical *alexis*, the pads being waisted instead of evenly ovate.

Skull and dentition.—The skull generally more lightly built, and, though the dimensions tend to intergrade, the interorbital region is definitely much narrower in the young holotype, a notable feature as the region usually narrows

with age, while the nasals are relatively narrower, the palatal foramina wider, and the bullæ are smaller and more transparent than in topotypical specimens of the original *alexis*. Incisors more slender, and much more orthodont, and molar row smaller, than in true *alexis*.

Dimensions of holotype.—Young adult male in spirit: head and body 91; tail 117; pes 29.5; ear 19 × 12 mm.

Skull: incomplete basally; zygomatic breadth 13; interorbital width 4.6; nasals 10.4 × 2.6; palatal length 14.5; palatilar length 12.7; palatal foramina 5.2 × 1.8; upper molar row 4.8; breadth of m¹ 1.8; bulla, length 5.9, breadth including meatal tubercle 6.2 mm.

Habitat—Timbered sand ridge country on Barcarolle Station, 135 miles south of Longreach, central western Queensland.

Holotype.—Young male, skin and incomplete skull, in the Queensland Museum collection, numbered 54 in the collector's list of the donor, Mr. F. L. Berney.

General Remarks.—In Brazenor's recent Revision of the Jerboa Mice³ some confusion of status and range is indicated by the relegation of *Ascopharynx fuscus* to the synonymy of *Notomys alexis*, and the untenable suggestion that *alexis* is synonymous with the geographically distant *aquilo* of Cape York. The range of *alexis* is given as barely reaching the South Australian border, whereas *fuscus* was described from about Ooldea on the Trans-Australian Railway, so that were the two forms identical an enormous almost coast to coast range should have been shown for the single species.

As indicated in the Check List, according to my examination of a large series, *fuscus* is actually synonymous with *cervinus*, as both the character of the gular pouch and the coincident range suggest. The typical *fuscus* has a similar gular pouch to *cervinus*, present in both sexes, and inclusion of its characters therefore renders Brazenor's description of *alexis* misleading, at least in regard to the variable nature of the gular region. Topotypes of *alexis*, collected by myself at Alexandria Downs, show no trace of folds of skin forming a pouch, while the original notes of Thomas merely referred to the "indication" of a glandular organ on the throat.

The new race agrees with the typical form of *alexis* in the simple structure of the gular area but is well differentiated otherwise. Owing to the immaturity of the only specimen, and the incompleteness of its skull, it seemed advisable to regard it as a subspecies only, though an adult series would probably exhibit characters warranting specific distinction.

³ Brazenor.—Mem. Nat. Mus. Melb., viii, 1934, pp. 74-89, pls. v-vii.

In regard to Brazenor's suggestion that *alexis* is doubtless a synonym of *aquilo*, it may be pointed out that, quite apart from the difference in incisive index and belly colour, his list of dimensions actually shows the holotype of *aquilo* to possess a greater head and body length and correspondingly longer hindfoot, with which is contrasted a definitely smaller ear.

Furthermore, the suggested continuous distribution of the two forms is negatived by the fact that the unique specimen of *aquilo* evidently came from the apex of the Peninsula and not "the dry areas south of Cape York," as it was collected in the 'sixties by Cockerell with his base at Somerset. Even if the range on Cape York was fairly considerable there is a river system, and much country inhospitable for the genus, forming a barrier to any recent continuity of geographical range for the two species.

As Thomas originated both forms after comparing the material it is reasonable to assume that examination of the holotype of *aquilo* would further emphasize the differences indicated above, and *alexis* must be regarded as definitely distinct in regard to characters as well as distribution.
